

REMARKS

This paper is being filed in response to the final official action dated December 13, 2006, in which claims 1- 9, 11-15, 18-34, and 36-45 have been rejected.

In the official action, claims 1-6, 11, 15, 21, 25-28, 36-37, and 44, and 45 were rejected as anticipated by or, in the alternative, as obvious over Warmbier et al., U.S. Patent No. 5,408,074. Claims 18, 19, 29, and 30 were rejected as obvious over Warmbier et al. Claims 8, 9, 20, and 32-34 were rejected as obvious over Warmbier et al. in view of MacKenzie, U.S. Patent No. 4,608,261. Claims 7 and 31 were rejected as obvious over Warmbier et al. in view of Miyazaki et al., U.S. Patent No. 4,565,670. Claims 14 and 43 were rejected as obvious over Warmbier et al. in view of GB 2 110 803 A (“GB ‘803”). Claims 12, 13, 22-24, and 38-42 were rejected as obvious over Warmbier et al. in view of GB ‘803.

By this amendment, independent claims 1, 2, and 45 have been amended to more clearly define the invention by reciting that the device for spirally transporting the substances includes a helical treatment chamber.

No new matter has been added by the amendments to the application.

Rejections Under 35 U.S.C. § 102 b)

Proper Basis for a § 102(b) Rejection

“A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference.” *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631 (Fed. Cir. 1987). Thus, a determination that a claim is anticipated under 35 USC § 102 involves two analytical steps. First, the U.S. Patent and Trademark Office (PTO) must interpret the claim language, where necessary, to ascertain its meaning and scope. In interpreting the claim language, the PTO is

permitted to attribute to the claims only their broadest *reasonable* meaning as understood by persons having ordinary skill in the art, considered in view of the entire disclosure of the specification. *See In re Morris*, 127 F.3d 1048, 1054 (Fed. Cir. 1997). Second, the PTO must compare the construed claim to a single prior art reference and set forth factual findings that “each and every limitation is found either expressly or inherently [disclosed] in [that] single prior art reference.” *Celeritas Techs. Ltd. v. Rockwell Int'l Corp.*, 150 F.3d 1354, 1360 (Fed. Cir. 1998). Additionally, “[t]he identical invention must be shown in as complete detail as is contained in the patent claim.” *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236 (Fed. Cir. 1989).

The § 102(b) Rejections are Moot and/or Traversed

The applicant respectfully traverses the rejection of claims 1-6, 11, 15, 21, 25-28, 36, 37, and 44 as anticipated by Warmbier et al. Independent claim 1, and claims 3-6, 11, and 15, depending directly or indirectly from claim 1, are directed to an apparatus for treating chemical substances in a microwave field that includes a microwave chamber, a container that extends at least partly in the microwave chamber for receiving the substances to be treated, and a device for spirally transporting the substances in the container. The container protrudes from the microwave chamber and the device for spirally transporting the substances includes a helical treatment chamber.

Claim 2 and claims 25-28, 36, 37, and 44, depending directly or indirectly thereon, are directed to an apparatus for treating chemical substances in a microwave field. The apparatus includes a microwave chamber, a flow-through contain which extends at least partly in the microwave chamber, for receiving the substances, and a mixing device for thorough mixing of the substances while they are being transported in the axial direction through the flow-through container. The flow-through container protrudes from the

microwave chamber and the device for spirally transporting the substances includes a helical treatment chamber.

Claim 45 is directed to an apparatus for treating chemical substances in a microwave field. The apparatus includes a microwave chamber, in which microwave radiation acts on the substances, a container, which extends at least partly in the microwave chamber, for receiving the substances to be treated, a device for spirally transporting the substances in the container that protrudes from the chamber, and a lateral connecting pipe adapted to feed a further chemical substance into the container. The container protrudes from the microwave chamber and the device for spirally transporting the substances includes a helical treatment chamber.

The helical shape of the treatment chamber has several advantages. For example, owing to the helical shape of the treatment chamber, the flow path is substantially increased compared with the vertical length and therefore the conveying distance and the residence time of the substance in the region of the microwave chamber are also increased. In addition, due to the helical shape, the substances are moved in translatory fashion and at the same time in the circumferential direction and transversely thereto. Accordingly, uniform heating of the chemical substance is obtained, while the chemical substance can in addition be conveyed in the pass-through direction. See, page 15, lines 9 through 28, of the application as originally filed.

Warmbier et al. discloses an apparatus in which a pipe is surrounded by a microwave resonator. The pipe contains a screw conveyer rotatably mounted in the pipe. Warmbier et al. does not disclose or suggest each and every recitation of claims 1, 2, or 45, as amended. Specifically, Warmbier et al. does not disclose or suggest a device for spirally transporting substances in a container that includes a helical treatment chamber. Instead, Warmbier et al.

only discloses the use of a screw conveyor 2 that transports materials in a translational direction 8. Accordingly, Warmbier et al. does not anticipate claim 1, 2, or 45.

Rejections Under 35 U.S.C. § 103(a)

Proper Basis for a § 103(a) Rejection

The PTO “has the burden under § 103 to establish a *prima facie* case of obviousness.”

In re Fine, 837 F.2d 1071, 1074 (Fed. Cir. 1988). To establish a *prima facie* case of obviousness, the PTO must satisfy three basic criteria. First, the PTO must show that the combined disclosure of the prior art references teaches or suggests all of the claim limitations. *See* MPEP § 2143 (8th ed., rev. 5, Aug. 2006). Moreover, it is “incumbent upon the examiner to identify wherein each and every facet of the claimed invention is disclosed in the applied reference.” *Ex parte Levy*, 17 USPQ2d 1461, 1462 (Bd. Pat. App. & Inter. 1990).

Second, where obviousness is alleged to arise from a combination of elements across a plurality of references, the PTO must show the existence of some suggestion, motivation, or teaching to those skilled in the art to make the precise combination recited in the claims. *See Iron Grip Barbell Co. v. USA Sports, Inc.*, 392 F.3d 1317, 1320 (Fed. Cir. 2004).

Compliance with this requirement prevents the PTO’s use of “the inventor’s disclosure as a blueprint for piecing together the prior art to defeat patentability — the essence of hindsight.”

Ecolochem, Inc. v. Southern Cal. Edison Co., 227 F.3d 1361, 1371-72 (Fed. Cir. 2000) (quoting *In re Dembiczak*, 175 F.3d 994, 999 (Fed. Cir. 1999)). Evidence of a suggestion or motivation to combine prior art references may come from “the prior art references themselves, the knowledge of one of ordinary skill in the art, or, in some cases, from the nature of the problem to be solved.” *Brown & Williamson Tobacco Corp. v. Philip Morris Inc.*, 229 F.3d 1120, 1125 (Fed. Cir. 2000). The PTO’s showing “must be clear and particular, and broad conclusory statements about the teaching of multiple references,

standing alone, are not ‘evidence.’” *Id.* (quoting *In re Dembiczak*, 175 F.3d at 1000).

Indeed, the U.S. Court of Appeals for the Federal Circuit has consistently held that a person having ordinary skill in the art must not only have had some motivation to combine the prior art teachings, but also some motivation to combine the prior art teachings in the particular manner claimed. *See, e.g., In re Kotzab*, 217 F.3d 1365, 1371 (Fed. Cir. 2000) (“Particular findings must be made as to the reason the skilled artisan, with no knowledge of the claimed invention, would have selected these components for combination in the manner claimed.”).

To support a conclusion that a claimed combination is *prima facie* obvious, either (a) the references must expressly or impliedly suggest the claimed combination to one of ordinary skill in the art, or (b) the PTO must present a convincing line of reasoning as to why a person of ordinary skill in the art would have found the claimed invention to have been obvious in light of the teachings of the references. *See Ex parte Clapp*, 227 USPQ 972, 973 (Bd. Pat. App. & Inter. 1985); *see also, In re Rinehart*, 531 F.2d 1048, 1051 (CCPA 1976). The mere fact that the prior art could be modified as proposed by the PTO is not sufficient to establish a *prima facie* case of obviousness. *See In re Fritch*, 972 F.2d 1260, 1266 (Fed. Cir. 1992). The PTO must explain why the prior art would have suggested to one of ordinary skill in the art the desirability of the modification. *Id.*; *In re Rouffet*, 149 F.3d 1350, 1357 (Fed. Cir. 1998) (“In other words, the examiner must show reasons that the skilled artisan, confronted with the same problems as the inventor and with no knowledge of the claimed invention, would select the elements from the cited prior art references for combination.”).

Finally, the PTO must demonstrate that a person having ordinary skill in the art would have a reasonable expectation of success when combining the disclosures of the references. The suggestion or motivation to make the claimed invention and the reasonable expectation of success must both be found in the prior art, and must not be derived by hindsight from

knowledge of the application's disclosure. *In re Dow Chem. Co.*, 837 F.2d 469, 473 (Fed. Cir. 1988); MPEP § 2143.

If an independent claim is not obvious under § 103(a), then any claim depending therefrom also is not obvious. *See* MPEP § 2143.03 (8th Ed., Rev. 5, Aug. 2006).

The § 103(a) Rejections are Moot and/or Traversed

Applicant respectfully traverses the rejection of claims 3, 18, 19, 29, and 30 as obvious over Warmbier et al. The rejection states that “the difference between Warmbier and the instant claims are each of the limitations recited in the instant claims.” This does not provide a proper basis for an obviousness rejection, and appears to be a statement that supports the patentability of these claims over Warmbier et al. In any event, Warmbier et al. does not disclose or suggest the subject matter of these claims, because, for example, there is no disclosure or suggestion in Warmbier et al. for having a device for spirally transporting substances that includes a helical treatment chamber, as noted above with respect to the anticipation rejections.

Applicant respectfully traverses the rejection of claims 8, 9, 20, and 32-34 as obvious over Warmbier et al. in view of MacKenzie. MacKenzie is directed to a method and apparatus of processing food stuff raw material that includes a preheating chamber and a main processing chamber having a microwave energy source therein. However, MacKenzie does not disclose or suggest a helical treatment chamber. Thus, even if one were to combine the teachings of Warmbier et al. with those of MacKenzie, one would not arrive at the claimed invention.

Applicant respectfully traverses the rejection of claims 7 and 31 as obvious over Warmbier et al. in view of Miyazaki et al. The official action states that the “difference between Warmbier as applied above and the instant claims is the provision that the recited inclination of the apparatus.” However, as set forth above in connection with the anticipation rejections, Warmbier et al. does not disclose or suggest a device for spirally transporting substances in a container that includes a helical treatment chamber. Miyazaki also fails to disclose or suggest a helical treatment chamber. Accordingly, even if one were to combine

the teachings of Warmbier et al. with the teachings of Miyazaki, one would not arrive at the claimed invention.

Applicant also respectfully traverses the rejection of claims 12, 13, 22-24, and 38-42 as obvious over Warmbier et al. in view of GB '803. As set forth above in connection with the anticipation rejections, Warmbier et al. does not disclose or suggest a device for spirally transporting substances in a container that includes a helical treatment chamber. GB '803 does not make up for the deficiencies of Warmbier et al. in this regard. Accordingly, even if one were to combine the teachings of Warmbier et al. with the teachings of GB '803, one would not arrive at the claimed invention. Accordingly, the rejection of claims 12, 13, 22-24, and 38-42 is improper and should be withdrawn.

Prima facie obviousness under § 103 is a legal conclusion — not a fact. *In re Rinehart*, 531 F.2d at 1052. The foregoing response identifies facts (e.g., evidence in the form of statements in the prior art) rebutting the alleged legal conclusion that the claimed invention is *prima facie* obvious. All of these facts must be evaluated along with the facts on which the legal conclusion was originally reached — not the legal conclusion itself. Having requested herein reconsideration of the legal conclusion set forth in the official action, the PTO is obligated to address all of the evidence and base its forthcoming legal conclusion(s) on such evidence, uninfluenced by its earlier conclusions. *Id.*

Given these shortcomings, it is respectfully submitted that the claimed invention is unobvious. Accordingly, reconsideration and withdrawal of the obviousness rejections are requested.

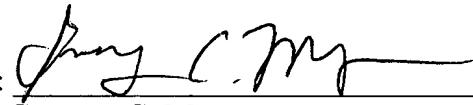
Conclusion

In view of the foregoing, entry of the amendments to the application, reconsideration and withdrawal of the rejections and objections, and allowance of all pending claims are respectfully requested.

Should the examiner wish to discuss the foregoing, or any matter of form or procedure in an effort to advance this application to allowance, the examiner is urged to contact the undersigned attorney at the telephone number listed below.

Respectfully submitted,

MARSHALL, GERSTEIN & BORUN LLP

By: 
Gregory C. Mayer
Reg. No. 38,238
Attorneys for Applicant

February 13, 2007

6300 Sears Tower
233 South Wacker Drive
Chicago, Illinois 60606-6357
(312) 474-6300